**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
SHERMAN DIVISION**

R2 Solutions LLC,	Case No. 4:21-cv-00940
Plaintiff,	JURY TRIAL DEMANDED
v.	
FedEx Corporate Services, Inc.,	
Defendant.	

**FEDEX CORPORATE SERVICES, INC.'S MOTION TO DISMISS
PURSUANT TO FED. R. CIV. P. 12(b)(6)**

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I.   INTRODUCTION

R2 Solutions LLC's ("R2") complaint should be dismissed under Fed. R. Civ. P. 12(b)(6) because each of the three asserted patents is ineligible under 35 U.S.C § 101. U.S. Patent No. 7,698,329 ("the '329 patent") ensnares the basic human activity of ranking documents, and preempts all forms of presenting search results to a user. R2's complaint confirms this by alleging that any search result sorting, including sorting *by date*, infringes the claims. U.S. Patent No. 8,341,157 ("the '157 patent") provides search results based on a user's intent—an activity undertaken by everyday sales staff inferring a customer's interest in a product by receiving questions about it. The patent concedes the preemptive scope of the claims by disclosing that an "intent" encompasses a user simply desiring to "explore information available on the web relating to one or more topics." '157, 3:46-52. U.S. Patent No. 8,190,610 ("the '610 patent") applies an admittedly known algorithm in MapReduce to particular data. But mere data manipulation, adding only a characterization of the input data, is not patentable. R2's sweeping allegations—in seventeen cases against companies with no connection other than they purportedly employ a basic search function or use MapReduce—confirm its patents are ineligible and preempt entire fields. The Court should grant Defendant's motion and dismiss R2's complaint.

II.   BACKGROUND

Since January 2021, R2 has filed seventeen patent cases asserting at least one of the patents-in-suit. R2's targets are not bounded by industry—they include financial institutions like J.P. Morgan and Charles Schwab, brick and mortar retailers like Walmart and Target, internet companies like Redfin and Expedia, and hardware and software manufacturers like Roku and Deezer. *See, e.g., R2 Sols. LLC v. JPMorgan Chase & Co.,* No. 4:21-cv-00174, Dkt. 1 (E.D. Tex. Mar. 2, 2021); *R2 Sols. LLC v. Walmart Inc.*, No. 4:21-cv-00091, Dkt. 1 (E.D. Tex. Jan. 29, 2021); *R2 Sols. LLC v. Redfin Corp.*, No. 4:21-cv-00945, Dkt. 1 (E.D. Tex. Nov. 29, 2021); *R2 Sols. LLC*

v. Roku, Inc., No. 6:21-cv-00553, Dkt. 1 (W.D. Tex. Jun. 1, 2021); *R2 Sols. LLC v. Deezer SA*, No. 4:21-cv-00090, Dkt. 1 (E.D. Tex. Jan. 29, 2021). On November 29, 2021, R2 filed the instant complaint against FedEx Corporate Services, Inc. ("FedEx"), asserting "at least claims 1, 4-5, 8, and 11-12" of the '329 patent, "at least claims 1-5 and 7-10" of the '157 patent, and "at least claims 1-5, 17-21, 33-34, 40-41" of the '610 patent. Dkt. 1 ¶¶ 44, 53, 62.

A.   The '329 Patent

The '329 patent discloses "[a] method and apparatus for improving search results." '329, Abstract. According to the patent, it was known to rank documents using a search engine. *Id.*, 1:60-67. It was also known that search engines "index" web documents and search that index in response to search queries. *Id.*, 1:45-59. The patent concedes these indexes include "directories, in which content is indexed more or less ***manually***, to reflect human observation." *Id.*, 1:45-49 (emphasis added). The patent further recognizes that "[t]he invention is related to ***the use*** of computer system 400 for implementing the techniques described herein." *Id.*, 5:26-27 (emphasis added). The purported advancement was to "allow a webmaster to designate what sections of [a] page should not be indexed," *id.*, 2:18-37, and to use non-indexed sections to "more accurately reflect relevance of the documents to search engine queries," *id.*, 3:1-23.

While the patent describes the functionality of a web crawler (e.g., deciding whether and how to index web documents), *id.*, the independent claims recite none of those features. Instead, claim 1 recites a single "ranking" step, followed by three "wherein" clauses that define data. The claim concludes with recitation of a computer that "perform[s]" the method:

> 1. A method, comprising:
> ranking a plurality of documents recalled by a search engine for a query:
> wherein the plurality of documents contain certain documents, each document of
>   said certain documents containing at least one section that is not used by said
>   search engine for recall and one or more sections that are used by said search
>   engine for recall;

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> wherein ranking a plurality of documents includes ranking said plurality of documents based, at least in part, on the at least one section of said certain documents not used by said search engine to recall documents; and
> wherein the method is performed by one or more computing devices.

Id., 7:2-16. The Court previously construed terms of the '329 patent in *R2 Sols. LLC v. Walmart Inc.*, No. 4:21-cv-00091, Dkt. 54 at 42-81 (E.D. Tex. Jan. 4, 2022). Ex. A ("*Markman*"). In that case, the Court construed "recall" to mean "generating results for a search engine query," "section" to mean "defined portion within the structure of a document," and "document" to mean "any unit of information that may be indexed by search engine indexes." *Id.*, 47, 54.

During prosecution, the Patent Office rejected the claims of the '329 patent under § 101. Ex. B at 93-95.[1] In response, the patentee amended the claims to recite "wherein the method is performed by one or more computing devices." *Id.*, 81, 85. At the time, i.e., before the Supreme Court's decision in *Alice Corp. Pty. v. CLS Bank Int'l*, 573 U.S. 208 (2014), the Patent Office considered this sufficient for eligibility. *Id.*, 23-29.

In its complaint, R2 cited charts that purportedly map claim 1 to various screen shots observed on FedEx's website. Dkt. 1-7. R2's theories of infringement broadly contend that (1) searching for customer name "Eri" on the FedEx website and sorting results by tracking number or date infringes claim 1, *id.*, 12, 13, 16, 19; (2) searching for the keyword "software" on the FedEx website and sorting results by "location" infringes claim 1, *id.*, 17, 20; and (3) searching "package" on the FedEx website and sorting results by "date" infringes claim 1, *id.*, 18, 21.

B.   The '157 Patent

The '157 patent discloses systems and methods of "intent driven search result

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[1] The Court should take judicial notice of the prosecution file history as a matter of public record. *SB IP Holdings, LLC v. Vivint Smart Home, Inc.*, No. 4:20-cv-886, 2021 WL 1721715, at *1 (E.D. Tex. Apr. 30, 2021) ("Courts routinely take judicial notice of patents, prosecution history, and patent applications.") (Mazzant, J.) (collecting cases).

presentation." '157, Abstract. The specification discloses that it was known for search engines to "use . . . ranked search results to build one or more search engine result pages." *Id.*, 4:8-15. It was also known that search engines "typically format[] the search results into concise summaries for each result using a default formatting," and it was "known in the art to more narrowly tailor search results and . . . employ sophisticated algorithms to rank search results." *Id.* According to the patent, the alleged improvement was purportedly ranking search results so that "results that are more relevant to the user's intent appear at or near the top of the search results." *Id.*

The patent concedes, however, that a user's intent "may simply be to explore information available on the web relating to one or more topics." *Id.*, 3:46-52. The patent provides an example: "a user may simply wish to browse web sites relating to 'rainforests' without having any specific purpose in mind." *Id.* The specification states that a user may have a "more focused purpose in mind," but places no limits on that purpose. *See id.*, 3:52-67 (identifying travel and merchandise related to "rainforests" by searching "rainforests," or buying, reading about, obtaining services for, or contacting owners of a Nikon D60 camera by searching "Nikon D60").

Claim 1 of the '157 patent recites:

1. A method comprising the steps of:
receiving, over a network, a query from a user, the query comprising at least one
    query token;
analyzing the query, using at least one computing device, to identify at least one
    query keyword;
determining, at least the one computing device, a plurality of intents from the at
    least one keyword, each of the plurality of intents indicates a type of
    information regarding the query keyword that is likely to be desired by a user
    submitting the query;
classifying the query, using the at least one computing device, into at least one of
    the plurality of intents;
identifying, using the at least one computing device, a plurality of data objects
    available over the network that match the at least one query keyword;
assigning, using the at least one computing device, at least one of the plurality of
    intents to at least some of the plurality of data objects;
ranking, using the at least one computing device, the plurality of data objects;

> building a result, using the at least one computing device, using the ranked plurality
> of data objects, the result comprises a plurality of display entries, at least one
> display entry customized to a respective assigned intent is constructed for each
> of the ranked plurality of data objects; and
>
> transmitting the result, over the network, to the user.

Id., 16:4-29. The Court construed terms of the '329 patent in the *Walmart* case, construing the

"determining" step to mean "determining, <u>using the</u> . . . computing device, . . . , <u>wherein</u> each . . . ."

Markman, 40 (emphasis added). The Court also accorded "intent(s)" its plain meaning. *Id.*, 34.

R2's complaint asserts that claim 1's "determining, . . . , a plurality of intents" element is

satisfied when functionality on the FedEx website searches any available search field and provides

hits for those search fields (i.e., searching the name "Eri" and returning hits in fields "Tracking

Number," "Shipper Name," "Recipient Contact Name," "Reference," and "Recipient City"). Dkt.

1-6, 14. According to R2, a searchable field is an "intent." *Id.* R2 additionally asserts that

"ranking, . . . , the plurality of data objects" is satisfied simply by sorting results ***by relevance*** to a

search term (i.e., "to the query and/or keyword"). *Id.*, 20.

C.   The '610 Patent

The '610 patent discloses the use of the MapReduce data manipulation algorithm "for

distributed database processing." '610, Title. The patent concedes that MapReduce was a known

"programming methodology" disclosed by Jeffrey Dean in the early days of Google, well before

the '610 patent. *Id.*, 1:4-16. The patent further concedes that MapReduce was known for

"perform[ing] parallel computations over distributed (typically, very large) data sets." *Id.*, 1:6-8,

3:9-12. The patent discloses that conventional MapReduce involves a mapping and reducing

phase, where "[t]he 'map' and 'reduce' functions are typically user-provided." *Id.*, 1:20-21, 6:8-10.

The alleged improvement was in characterizing the input data: "an input data set is treated as a

plurality of grouped sets of key/value pairs, which enhances the utility of the MapReduce

programming methodology." *Id.*, Abstract, 1:31-33, 1:66-2:8. According to the patent, "the

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conventional MapReduce implementations d[id] not have facility to efficiently process data from heterogeneous sources," and it was "impractical to perform joins over two relational tables that have different schemas." *Id.*, 3:9-20. The patent provides an example of "data of different schema" in Figure 3, showing an "Employee" table 302 with "DeptID" and "EmpName" records, and a "Department" table 304 with a "DeptID" and "DeptName" records. *Id.*, 3:18-34.

Claim 1 of the '610 patent recites:

1. A method of processing data of a data set over a distributed system, wherein the data set comprises a plurality of data groups, the method comprising:
partitioning the data of each one of the data groups into a plurality of data partitions that each have a plurality of key-value pairs and providing each data partition to a selected one of a plurality of mapping functions that are each user-configurable to independently output a plurality of lists of values for each of a set of keys found in such map function's corresponding data partition to form corresponding intermediate data for that data group and identifiable to that data group, wherein the data of a first data group has a different schema than the data of a second data group and the data of the first data group is mapped differently than the data of the second data group so that different lists of values are output for the corresponding different intermediate data, wherein the different schema and corresponding different intermediate data have a key in common; and
reducing the intermediate data for the data groups to at least one output data group, including processing the inter mediate data for each data group in a manner that is defined to correspond to that data group, so as to result in a merging of the corresponding different intermediate databased on the key in common, wherein the mapping and reducing operations are performed by a distributed system.

Id., 8:60-9:19. In *Walmart*, the Court construed "a plurality of mapping functions that are each user-configurable" to mean "two or more mapping functions that are each configurable by a user," and "data group" to mean "a group of data and a mechanism for identifying data from that group." *Markman*, 13-15, 23-25. The Court further determined that the independent claim preambles are limiting. *Id.*, 19-22.

During prosecution, the Patent Office rejected the claims of the '610 patent as being directed to nonstatutory subject matter: "[m]erely claiming <u>non</u>functional descriptive material, i.e., abstract ideas, stored on a computer-readable medium, in a computer, or on an electromagnetic

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carrier signal, does not make it statutory." Ex. C at 109-22; *see also id.*, 202-38, 151-62.[2] The

patentee amended the claims, but only "to clarify that the computer system comprises at least one

processor and memory that are operable to perform such steps," *id.*, 102, which, before *Alice*, the

Patent Office accepted as sufficient, *id.*, 74-86.

R2 alleges infringement based on the purported use of commercially-available MapReduce

software in "Apache Hadoop with Hive and Spark." Dkt. 1-5 at 31-38. Significantly, for the "data

of the first data group [being] mapped differently than the data of the second data group," R2

identifies human activity. *Id.*, 32 ("Users can also plug in their own customer mappers and

reducers"), *id.* ("The user supplied Mapper ***does whatever it wants*** with the input pair") (emphasis

added).

III.   LEGAL STANDARD

A complaint that fails to state a plausible claim for relief must be dismissed under Fed. R.

Civ. P. 12(b)(6). *Semantic Search Techs. LLC v. Aldo U.S., Inc.*, 425 F. Supp. 3d 758, 768 (E.D.

Tex. 2019) (citing *Ashcroft v. Iqbal*, 556 U.S. 662, 678 (2009); *Bell Atl. Corp. v. Twombly*, 550

U.S. 544, 570 (2007)). In assessing plausibility, the Court need not accept "conclusory allegations,

unwarranted factual inferences, or legal conclusions." *Plotkin v. IP Axess Inc.*, 407 F.3d 690, 696

(5th Cir. 2005). Patent eligibility under 35 U.S.C. § 101 "may be, and frequently has been,"

resolved on motions to dismiss, before claim construction or fact discovery. *Semantic*, 425 F. Supp.

3d at 768 (quoting *SAP Am. Inc. v. Investpic, LLC*, 898 F.3d 1161, 1166 (Fed. Cir. 2018)).

Under § 101, a claim is ineligible when it (1) is directed to an abstract idea; and (2) fails to

recite significantly more than the abstract idea. *Id.* (citing *Alice*, 573 U.S. at 217-18). At step one,

"[m]ethods which can be performed mentally, or which are the equivalent of human mental work,

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[2] The Court should take judicial notice of the prosecution file history as a matter of public record.
See supra n.1.

are unpatentable abstract ideas." *Id.*, 774 (quoting *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371 (Fed. Cir. 2011)). So are claims that focus on "collecting information, analyzing it, and displaying certain results." *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016). At step two, the additional elements must be "more than 'well-understood, routine, conventional activity.'" *Semantic*, 425 F. Supp. 3d. at 777 (citing *Intell. Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1340 (Fed. Cir. 2017)). The "mere recitation of conventional computer and client-server elements 'provides no additional limitation beyond applying an abstract idea, restricted to the Internet, on a generic computer.'" *Id.* (citations omitted).

IV.   ARGUMENT

A.   The Claims of the '329 Patent Are Directed to the Abstract Idea of Ranking Search Results

The claims of the '329 patent are directed to the abstract idea of ranking search results using a portion of the returned content not used to generate the search results. Under the first step of *Alice*, this is nothing more than (1) a human activity applied on a computer; (2) the collection and organization of data for display; and (3) a fundamental practice that preempts nearly all search systems. The inclusion of a generic computer fails to transform the abstract idea into a patent-eligible invention under *Alice* step two.

i.   Claim 1 Is Representative of the Claims of the '329 Patent

Claim 1 recites "ranking a plurality of documents recalled by a search engine for a query," where "certain documents contain[] at least one section that is not used by said search engine for recall and one or more sections that are used by said search engine for recall," the ranking being "based, at least in part" on "at least one section of said certain documents not used by said search engine to recall documents." For purposes of the eligibility analysis, claim 1 is representative. Indeed, R2 only mapped this claim in its complaint. Dkt. 1-7. Claims 2-14 do not alter the character

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of claim 1 or add anything to the abstract idea. *Semantic*, 425 F. Supp. 3d at 771-72 (claims

representative where others "are all 'substantially similar in that they recite little more than the

same abstract idea.'") (quoting *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat.

Ass'n*, 776 F.3d 1343, 1348 (Fed. Cir. 2014)). Independent claim 8 is nearly identical to claim 1,

adding only "computer-readable medium" and "processors" for the same activity. *E.g., In re TLI

Commc'ns LLC Pat. Litig.*, 823 F.3d 607, 613 (Fed. Cir. 2016) ("[R]ecitation of concrete, tangible

components is insufficient to confer patent eligibility to an otherwise abstract idea.").

Dependent claims 2, 3, 9, and 10 merely characterize the data being ranked, describing it

as having or not having "element tags." *Intell. Ventures I LLC v. Erie Indem. Co.*, 850 F.3d 1315,

1327 (Fed. Cir. 2017) ("'[L]ocating information in a database, and . . . using an index that includes

tags and metafiles to locate the desired information[]' . . . includes longstanding conduct that

existed well before the advent of computers and the Internet."); *PersonalWeb Techs. LLC v.

Google LLC*, 8 F.4th 1310, 1316 (Fed. Cir. 2021) (same). Dependent claims 4 and 11 recite

extra-solution and human-practicable activity of "generating data . . . [that] includes an abstract

describing each document." *Semantic*, 425 F. Supp. 3d at 771 (generating and displaying

"descriptions" to improve search results is an abstract idea). Dependent claims 5 and 12 similarly

recite the human activity of "using" a search engine that indexes documents. '329, 1:47-49

("content is indexed ***more or less manually***.") (emphasis added); *BSG Tech LLC v. AutoZone, Inc.*,

No. 2:16-cv-529, 2017 WL 2609066, at *4 (E.D. Tex. Mar. 30, 2017), ("[I]ndexing an item on a

database" is a "'routine task that could be performed by a human.'") (quoting *eDekka LLC v.

3Balls.com, Inc.*, No. 2:15-cv-541, 2015 WL 5579840, at *4 (E.D. Tex. Sept. 21, 2015)) *aff'd sub

nom. BSG Tech LLC v. Buyseasons, Inc.*, 899 F.3d 1281 (Fed. Cir. 2018); *Erie*, 850 F.3d at 1327

("[C]reating an index and using that index to search for and retrieve data" is an abstract idea).

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Dependent claims 6, 7, 13, and 14 simply invoke—by name only—known methods of relevance ranking using "vector space" and "language" models. *See* '329, 4:29-53; *Blackbird Tech LLC v. Advanced Discovery Inc.*, No. 1:16-cv-00413, 2017 WL 2734725, at *5 (D. Del. June 26, 2017) ("'[V]ector-related elements,' . . . , undisputedly rely on 'fuzzy logic' for ranking the search results, and fuzzy logic is based on mathematical equations that have been used since the 1960's."); *Semantic*, 425 F. Supp. 3d at 774 (dependent claims are not representative where "Plaintiff . . . did not invent the [claimed feature] and does not explain how the technology or arrangement is non-conventional"). Claims 6, 7, 13, and 14 are also not asserted in this case.[3] Dkt. 1 ¶ 62.

ii.   Claim 1 Recites an Abstract Process Performed by Humans

Ranking search results based in part on information not used to generate the search results is an abstract human activity that, at best, invokes computers merely as a tool. The Federal Circuit has consistently found this type of computer-implemented, human endeavor ineligible. *E.g.*, *Elec. Power Grp.*, 830 F.3d at 1354 ("[T]he focus of the claims is . . . on certain independently abstract ideas that use computers as tools."); *Customedia Techs., LLC v. Dish Network Corp.*, 951 F.3d 1359, 1364 (Fed. Cir. 2020); *Affinity Labs of Texas, LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1262 (Fed. Cir. 2016). So has the Court. *Semantic*, 425 F. Supp. 3d at 774-75 ("[S]imply providing for the use of a computer to perform 'economic or other tasks for which a computer is used in its ordinary capacity'" is insufficient); *eDekka*, 2015 WL 5579840, at *4; *Intell. Ventures I LLC v. J. Crew Grp., Inc.*, No. 6:16-cv-196, 2016 WL 4591794, at *5 (E.D. Tex. Aug. 24, 2016), *aff'd sub*

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[3] In addition to not being asserted, the specification describes these models for "rating," not "ranking." According to the specification, web crawlers use the models to determine if a section should be indexed or not, by "rating" the relevance of sections of a document against a "main topic of the page." '329, 4:17-53 ("Section ***rating scores*** can be determined from the document model.") (emphasis added). This is different from using the models to ***rank*** search results, as recited in claims 6, 7, 13, and 14. Thus, the claimed models—in addition to not be asserted—do not inform how the ranking occurs to support eligibility.

nom. Intell. Ventures I LLC v. FTD Cos., 703 F. App'x 991 (Fed. Cir. 2017).

The specification confirms the claims invoke computers simply as tools by stating that "***[t]he invention*** is related to ***the use*** of computer system 400 for implementing the techniques described herein." '329, 5:26-27 (emphases added); *Bridge & Post, Inc. v. Verizon Commc'ns, Inc.*, 778 F. App'x 882, 887 (Fed. Cir. 2019) ("'[W]hat the patent describes as its invention,' can also be useful in determining what a claim is directed to."). "This is a quintessential 'do it on a computer' patent: it acknowledges that data . . . was previously collected, analyzed, manipulated, and displayed manually, and it simply proposes doing so with a computer." *Univ. of Fla. Rsch. Found., Inc. v. Gen. Elec. Co.*, 916 F.3d 1363, 1367 (Fed. Cir. 2019).

Claim 1 is indistinguishable from *Semantic* and *Blackbird* and should suffer the same fate. In *Semantic*, the Court held that claims were abstract that "merely recite the steps of collecting information from the user (search terms), maintaining and storing potentially related information (the database), [and] ranking information based on potential relevancy (scoring)." 425 F. Supp. 3d at 776. In *Blackbird*, the claims recited "conducting a search" and "ranking the search results" most relevant to a concept. 2017 WL 2734725, at *4. The court held the claims abstract as "generalized steps to be performed on a computer using conventional computer activity." *Id.*

Claim 1 additionally ensnares everyday human activity. A lawyer, for example, searching for cases using keywords—using an electronic database or law books in a library—and sorting the results by something other than the keywords, *e.g.,* by date or jurisdiction, satisfies claim 1 under R2's allegations. *See* Dkt. 1-7, 16-21. So does a librarian or bookstore clerk searching an electronic or card-based catalog system by topic or keyword, retrieving the books, and then manually sorting them by publication date. *See id.* Such routine, human-practicable concepts are ineligible abstract ideas. *PersonalWeb*, 8 F.4th at 1316 ("Librarians often locate books based on a 'call system'");

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Intell. Ventures, 2016 WL 4591794, at *5 ("The typical sales clerk at a hardware store often performs these same steps."); *Cogent Med., Inc. v. Elsevier Inc.*, 70 F. Supp. 3d 1058, 1063-64 (N.D. Cal. 2014) ("This idea is little different than the basic concept of organizing a physical library so that an individual can search for information . . . .").

The breadth of claim 1 underscores its abstractness. The "ranking" is broad enough to encompass ranking based on *anything* within a "defined portion within the structure of a document" not used for "generating results for a search engine query." *See Markman*, 47, 54; *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1363 (Fed. Cir. 2015) ("the claims are exceptionally broad and the computer implementation limitations do little to limit their scope."). *eDekka*, 2015 WL 5579840, at *4 ("The inclusion of terms that may vaguely allude to computer-based activity does not suffice to meaningfully restrict the . . . [p]atent from preempting the abstract idea itself."). This includes keyword searching and sorting the results by date, location, author, or any other piece of data not used to generate the search results. *Cisco Sys., Inc. v. Uniloc 2017 LLC*, 813 F. App'x 495, 497 (Fed. Cir. 2020) ("The general recitation of the familiar concepts of ranking and selecting leaves the claimed method 'untethered to any specific or concrete way of implementing it.'") (quoting *Affinity Labs*, 838 F.3d at 1258); *see also id.* at 498 ("The claim does not specify any particular metric or method for ranking."); *Two-Way Media Ltd. v. Comcast Cable Commc'ns, LLC*, 874 F.3d 1329, 1337 (Fed. Cir. 2017) ("The claim . . . does not sufficiently describe how to achieve these results in a non-abstract way.") (citation omitted).

Ranking is done every day using a computer's "sort by" function, or by printing and manually ranking documents by hand. *CyberSource*, 654 F.3d at 1372 (claims that "can be performed in the human mind, or by a human using a pen and paper" are abstract); *Elec. Power Grp.*, 830 F.3d at 1356 ("they purport to monopolize every potential solution to the problem.").

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Even if confined to ranking "search engine" results, this would preempt the use of all search functions—including everyday use of internet web browsers or electronic search tools (e.g., inventory systems, catalog systems, database search tools, company directories, intranet search systems, etc.). *Semantic*, 425 F. Supp. 3d at 775-76; *Enco Sys., Inc. v. DaVincia, LLC*, 845 F. App'x 953, 957 (Fed. Cir. 2021), *cert. denied*, 142 S. Ct. 435 (2021). R2's infringement allegations confirm this broad scope by identifying sorting ***by date*** or ***by location*** as infringing. Dkt. 1-7 at 13 ("date"), 19 ("date"), 20 ("location"), 21 ("date").

iii. Claim 1 Recites the Abstract Collection, Analysis, and Display of Data

The ranking of claim 1 also falls within the familiar class of abstract ideas that collect, analyze, and display information to a user. Claim 1's "ranking a plurality of documents" is simply ordering a list of documents based on certain data in those documents, which captures the abstract concept of organizing and displaying of information to a user. This is no different than the claims found abstract in *Electric Power Group, LLC v. Alstom S.A.*, which involved "collecting information, including when limited to particular content," and "presenting the results of abstract processes of collecting and analyzing information, without more (such as identifying a particular tool for presentation)." 830 F.3d at 1353 (collecting cases). Claim 1 is also indistinguishable from *Intell. Ventures I LLC v. Capital One Bank (USA)*, where tailoring the display of web pages based on "the time of day of viewing" or "the viewer's location or address" were directed to "abstract, overly broad concept[s] long-practiced in our society." 792 F.3d 1363, 1370 (Fed. Cir. 2015).

Claim 1 is not rooted in computer activity. The Federal Circuit has consistently held that, "[t]o be directed to a patent-eligible improvement to computer functionality, the claims must be directed to an improvement to the functionality of the computer or network platform itself." *Customedia*, 951 F.3d at 1365. Merely "improving a user's experience while using a computer application is not, without more, sufficient." *Id.* Here, claim 1 only recites ranking documents

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"recalled by a search engine for a query," which, as described above, encompasses everyday human activity and not an intrinsic computer function. *See Evolutionary Intel., LLC v. Sprint Nextel Corp.*, 137 F. Supp. 3d 1157, 1167 (N.D. Cal. 2015) ("[T]he problem identified . . . is not even a computing problem, but an information organization problem."), *aff'd*, 677 F. App'x 679 (Fed. Cir. 2017); *Semantic*, 425 F. Supp. 3d at 775 ("[T]he claims are not rooted in an improvement to computer technology but merely apply generic computer technology" to human activity).

The claims also fail to address the purported improvement: "allow[ing] a webmaster to designate what sections of [a] page should not be indexed." '329, 2:18-37. Nor do they rank based on non-indexed sections of documents. *See id.*, 3:1-23. Claim 1 simply ranks based on any item of information within a portion of a document (i.e., a "section") not used to generate the search results (i.e., for "recall"). Claim 4 recites "using" a search index but only identifies what data is excluded from the index—without relation to claim 1's ranking. *ChargePoint, Inc. v. SemaConnect, Inc.*, 920 F.3d 759, 769 (Fed. Cir. 2019) ("[T]he § 101 analysis must always yield to the claim language."); *Hyper Search, LLC v. Facebook, Inc.*, No. CV 17-1387, 2018 WL 6617143, at *9 (D. Del. Dec. 17, 2018) (alleged improvements must "correlate . . . to the claims."). Even if ranking based on non-indexed sections was claimed (it is not), it would still not confer eligibility because characterization of data in an "index" is not patentable. *Erie*, 850 F.3d at 1327 ("[C]reating an index and using that index to search for and retrieve data" is an abstract idea); *PersonalWeb*, 8 F.4th at 1316 ("content-based identifiers" are abstract); *SAP*, 898 F.3d at 1168 ("[C]ollecting and analyzing information . . . 'limited to particular content' or a particular 'source'" is insufficient) (quoting *Elec. Power Grp.*, 830 F.3d at 1353). Creating indexes is also a human activity. '329, 1:47-49 ("content is indexed more or less manually."); *BSG Tech*, 2017 WL 2609066, at *4 ("[I]ndexing an item on a database" is a "'routine task that could be performed by a human.'").

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iv.   Claim 1 Fails to Recite Significantly More Than the Abstract Idea

Under step two, claim 1 fails to recite any transformative elements. Removing ranking, claim 1 merely recites "wherein the method is performed by one or more computing devices." '329, 7:15-16. Adding generic computers to an otherwise abstract process, however, does not confer eligibility. *TLI*, 823 F.3d at 613; *Capital One*, 792 F.3d at 1368; *Landmark Tech., LLC v. Assurant, Inc.*, No. 6:15-cv-76, 2015 WL 4388311, at *8 (E.D. Tex. July 14, 2015) ("At best, the claim recites carrying out these well-known functions, in a routine sequence, through a generic computer system."); *First-Class Monitoring, LLC v. United Parcel Serv. of Am., Inc.*, 389 F. Supp. 3d 456, 470-71 (E.D. Tex. 2019) ("[D]ifferent information . . . being conveyed by the same conventional technology . . . . is not enough."); *see also Blackbird*, 2017 WL 2734725, at *5 (same). The specification confirms the recited "computing devices" are generic by describing them as nothing more than conventional computer hardware "upon which an embodiment of the invention may be implemented." '329, 4:62-6:67 ("Hardware Overview").

The claims also fail to present an inventive combination of elements. Instead, the claims recite a single, abstract "ranking" step that uses particular data to perform the ranking, and nothing more. *Semantic*, 425 F. Supp. 3d at 777 ("[T]he use of conventional technology that differs from the prior art only in that it is being used to transmit different information is not patentable subject matter."). Sorting by date, location, or some other information in the content of search results is also unconventional—it is a recitation of the abstract idea itself. *Cisco*, 813 F. App'x 495, 499 (Fed. Cir. 2020) ("Uniloc's only alleged inventive concept is coincident with the abstract idea itself."); *First-Class*, 389 F. Supp. 3d at 471 ("[P]laintiff can avoid dismissal simply by reciting in the complaint . . . that the inventive concept resides in the abstract idea itself."). And broadly reciting "ranking," without explaining how, does not provide an inventive concept. *See supra* Section IV.A.ii (discussing "[t]he breadth of claim 1"); *Elec. Power Grp.*, 830 F.3d at 1355

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("Inquiry therefore must turn to any requirements for how the desired result is achieved.").

v. No Factual Disputes Preclude Resolution

The Federal Circuit has recognized that "not every § 101 determination contains genuine disputes over the underlying facts material to the § 101 inquiry." *PersonalWeb*, 8 F.4th at 1314. No factual disputes, let alone genuine disputes, preclude the instant motion. *First-Class*, 389 F. Supp. 3d at 471 (collecting cases); *Semantic*, 425 F. Supp. 3d at 773. Contrary to R2's allegations, the claims do not present a "method of indexing pages [that] improves navigation of the World Wide Web," or "thwart[] nefarious Web users seeking to game Web query rankings." Dkt. 1 ¶ 37. The claims instead recite ranking documents based on a characterization of the data being ranked (i.e., based on information not used to "generat[e] results for a search engine query"). *See Markman*, 49. Claim 4 at most recites "using" a search engine that does not index certain terms, without a connection to claim 1's "ranking." *See supra* Section IV.A.iii (addressing purported improvement in the art). Unclaimed features cannot establish an inventive concept. *ChargePoint*, 920 F.3d at 769 ("'[T]he § 101 inquiry must focus on the language of the . . . Claims themselves'") (quoting *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1149 (Fed. Cir. 2016)).

B. The Claims of the '157 Patent Are Directed to Providing Search Results Based on a User's Intent

Under *Alice* step one, the claims of the '157 patent are directed to the abstract idea of providing search results based on a user's intent. Like the '329 patent, this captures (1) human activity applied on a computer; (2) the collection and organization of data for display; and (3) a fundamental practice that preempts nearly all search systems. Under *Alice* step two, the claims fail to recite additional elements that convey an inventive concept.

i. Claim 1 Is Representative of the Claims of the '157 Patent

Claim 1—the only claim R2 analyzed in its complaint—is representative. *See* Dkt. 1-6.

Claim 1 recites "receiving, . . . , a query from a user," "analyzing the query, . . . , to identify at least one query keyword," "determining, . . . , a plurality of intents from the at least one keyword, . . . indicat[ing] a type of information . . . that is likely to be desired by a user submitting the query," "ranking" data objects matching the keyword, and "building a result . . . using the ranked plurality of data objects" that is "transmitt[ed]" to the user. At its core, claim 1 provides search results (i.e., builds and transmits a "result" using ranked "data objects") based on a user's intent.

Claims 2-23 do not add eligible subject matter. *Semantic*, 425 F. Supp. 3d at 771-72. Independent claim 2 is nearly identical to claim 1, adding only "computer-readable medium" and "computer-executable instructions." *TLI*, 823 F.3d at 613. Claim 3 contemplates an "unclassified" intent (e.g., "when no defined intents match the query," '157, 9:42-44). *Erie*, 850 F.3d at 1327 ("[C]lassifying data . . . and storing it based on its classification" is abstract); *PersonalWeb*, 8 F.4th at 1316. Claim 4 parses the tokens of claim 1 (e.g., into "phrases," "spelling errors," and "noisewords," '157, 9:38-41). *Semantic*, 425 F. Supp. 3d at 773 ("[L]imiting an element already recited does not change the focus of the claims or introduce an inventive concept."); *PersonalWeb*, 8 F.4th at 1316 ("content-based identifiers" are abstract). Claims 5-10 further defines how the query is "classif[ied]" into an intent (i.e., using "linguistic analysis," user "profile information," "previous queries," and "click data"). *E.g., Semantic*, 425 F. Supp. 3d at 776-77 ("[S]toring and accessing buyer profiles for returning buyers does not provide meaningful limitations on the abstract idea."); *BSG*, 2017 WL 2609066, at *5. Claim 11 recites ranking the data objects "by intent." *Semantic*, 425 F. Supp. 3d at 773 (further limitations do not change focus); *USC IP P'ship, L.P. v. Facebook, Inc.*, No. 6:20-CV-00555, 2021 WL 6690275, at *5 (W.D. Tex. Dec. 20, 2021) (using a "ranking tool" with a user's "inferred intent" is abstract—"it is a standard web browser functionality"). Claims 12-23 simply define the presentation of data to a user (e.g.., "building"

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using "presentation rules"). *Elec. Power Grp.*, 830 F.3d at 1354 ("[M]erely presenting the results of abstract processes" is abstract). Moreover, only claims 1-5 and 7-10 are asserted. Dkt. 1 ¶ 53.

ii.   Claim 1 Recites an Abstract Process Performed by Humans

Providing search results based on a user's intent is a human process applied on a computer. Claims of this character have consistently been held abstract. In *USC*, the court determined that "finding information that matches the user's intent – is a longstanding problem that existed long before the advent of computers and is not unique to the Internet." 2021 WL 6690275, at *5. In *Collarity, Inc. v. Google Inc.*, the court held that "librarians and other researchers have long known to improve a search query to reflect the user's intended area of interest." No. CV11-1103, 2015 WL 7597413, at *4-*8 (D. Del. Nov. 25, 2015) ("[R]efining search queries (i.e., questions) by switching some words used in the query" is "an abstract idea known outside of a computer or Internet context and could be practiced using only the human mind."). In *Semantic*, the Court found that "[h]umans have traditionally and routinely fielded search requests where the back-and-forth communication is necessary to narrow the query (e.g., salespersons, librarians, etc.)." 425 F. Supp. 3d at 775-76 (finding abstract "iteratively searching for and presenting information based on user feedback"). In *Blackbird*, the court held that "1) conducting a search based on a search query, 2) determining a concept associated with a search query, 3) and then ranking the search results based on which documents are most relevant to that concept . . . . are merely generalized steps to be performed on a computer using conventional computer activity and therefore an abstract idea." 2017 WL 2734725, at *4 (citation and internal quotations omitted). The same result applies here.

Stripped of its conventional computer elements (e.g., "computing device" and "network"), claim 1 recites (1) receiving a query; (2) analyzing it to identify a keyword; (3) determining a plurality of user intents from the keyword; (4) classifying the query into an intent; (5) identifying data objects (e.g., "documents such as web pages," "media objects," etc.) matching the keyword;

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(6) assigning the intent to the data objects; (7) ranking the data objects; and (8) presenting the ranking to the user. This is what a sales clerk does every day. A clerk at an auto parts store, for example, receiving questions about "motor oil" (1) receives a query (e.g., "what motor oil do you recommend for my car?"); (2) analyzes it to find a keyword (e.g., "motor oil"); (3) determines a plurality of intents (e.g., "the customer wants to buy and learn more about motor oil for his vehicle"); (4) classifies the query into an intent (e.g., "the customer is asking about motor oil because he wants to purchase motor oil for his vehicle"); (5) identifies data objects matching the keyword (e.g., locates available motor oil on a computer system, in a catalog, or on the shelf); (6) assigns an intent to the data objects (e.g., "the customer wants to purchase one of these available motor oils"); (7) ranks the data objects (e.g., ranks the top candidates the customer may likely purchase); and (8) presents that information to the user (e.g., shows the customer the candidate motor oils—at a counter, on a computer screen, or on a print-out the customer can take home). This human activity occurs in almost every sales context. *E.g., Semantic*, 425 F. Supp. 3d at 774-75; *eDekka*, 2015 WL 5579840; *J. Crew*, 2016 WL 4591794, at *5; *Content Extraction*, 776 F.3d at 1347 ("[H]umans have always performed these functions.").

The specification's examples of "intent" bear this out. '157, 3:46-67. The first example—querying "rainforests" with an intent of "obtain[ing] information on traveling to a rainforest, or on purchasing CDs or books having rainforests as a subject" (*id.*)—is an activity that occurs daily at libraries and bookstores. The second example—querying "Nikon D60" camera with the intention of "purchasing," "reading reviews for," "obtaining services for," or "reading a user manual for"—is daily occurrence in an electronics store. *See id.*

Even if claim 1 is confined to operations on a "computing device" and over a "network," the abstract concept would preempt all forms of electronic searching. *OIP Techs.*, 788 F.3d at

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1363; *eDekka*, 2015 WL 5579840, at *4; *Semantic*, 425 F. Supp. 3d at 775. R2's infringement allegations demonstrate this by asserting that an "intent" is satisfied by searching a particular category of data or field (e.g., a column of a table). Dkt. 1-6 at 14. A lawyer searching on Westlaw and getting hit counts for "cases," "statutes," and "secondary materials," satisfies the claim. So does searching any electronic database of information with different data fields or columns, such as a library catalog system, a company directory, an inventory system, database searches, and company intranet searches. The specification, in fact, confirms all internet searching is preempted: "[t]he user's intent may simply be to explore information available on the web relating to one or more topics." '157, 3:48-50. The specification's example do too: identifying a product website (i.e., "official-site") by querying the product name, or seeking "directions" by querying maps (*id.*, 9:50-53) are example "intents." This casts a shadow over the entire internet.

iii.   Claim 1 Recites the Abstract Collection and Analysis of Data for Display

Providing search results based on a user's intent is nothing more than the collection, analysis, and display of information that has consistently been held abstract. *See, e.g.*, *Elec. Power Grp.*, 830 F.3d at 1353; *Capital One*, 792 F.3d at 1370. Claim 1 receives a query with a keyword, determines a plurality of intents, classifies the query, identifies data objects matching the keyword, ranks the data objects, builds "a result," and "transmit[s] the result, over the network, to the user." This is "presenting the results of abstract processes of collecting and analyzing information, without more." *Elec. Power Grp.*, 830 F.3d at 1353 (collecting cases).

Instead of claiming a particular way of determining a user "intent" or "ranking" (whether by intent or otherwise), claim 1 merely recites the result. *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1241 (Fed. Cir. 2016); *Elec. Power Grp.*, 830 F.3d at 1356. The specification acknowledges this by conceding the data objects may be "ranked using ***any ranking algorithm*** known in the art."

'157, 10:5-6 (emphasis added). Such open-ended, abstract concepts are ineligible:

> [T]he language[] in claim 1 . . . recite[s] functional result steps such as "processing the at least one input parameter . . . to determine at least one inferred intent," "processing the confirmed intent . . . to determine at least one recommended webpage that matches the confirmed intent," with no explanation of how "processing" steps are performed or how it causes the intent engine to determine an "inferred intent" or "at least one recommended webpage." The specification similarly offers little explanation of how these claimed functions are carried out and how they improve the performance of the network platform . . . . Therefore, the . . . patent claims simply recite mere results without reciting specific steps that accomplish the results.

USC, 2021 WL 6690275, at *5; *Semantic*, 425 F. Supp. 3d at 775 ("[P]atent does not claim to have invented a particular mapping technique but rather explains that the invention is to 'confirm' or 'extract' the inferred mapping as a user intended."); *Cisco*, 813 F. App'x at 497.

The specification's description of an "unclassified" intent—ostensibly meaning the intent may be the *keyword itself*—demonstrates that claim 1 ensnares basic keyword searching. '157, 16:59-60, 1:51-52 ("[I]n some embodiments, 'unclassified' can be a valid intent."), 9:42-44 ("The query is then classified into one or more likely intents, which can include an unclassified intent when no defined intents match the query."); *see also id.*, 16:59-60 (claim 3). Indeed, the patent contemplates precisely that: "[t]he user's intent *may simply be to explore information available on the web* relating to one or more topics, for example, a user may simply wish to browse web sites . . . *without having any specific purpose in mind*." *Id.*, 3:48-52 (emphases added).

R2's infringement allegations confirm claim 1 is boundless. According to R2, providing hit counts in any searchable field is purportedly "determin[ing] multiple intents corresponding to the query keyword." Dkt. 1-6 at 14 (e.g., searching a "Tracking Number" field is an intention to search for tracking number). R2 additionally asserts that any ranking of search results—even by a default sort or manual process—infringes, regardless of any purported intent or data field that is searched. *Compare id.*, 19 (sorting by "status"), *with id.*, 14 (searching fields "Tracking Number,"

"Shipper Name," "Recipient Contact Name," "Reference," and "Recipient City").

iv.　　Claim 1 Fails to Recite Significantly More Than the Abstract Idea

Removing the abstract idea from claim 1 leaves only "a network" and "at least one computing device." These generic computing elements, invoked for their everyday use, fail to transform the abstract idea into a patentable invention under *Alice* step two. *E.g.*, *Elec. Power Grp.*, 830 F.3d at 1355. The specification confirms this by disclosing that "conventionally known" computing devices and networks are used "for carrying out the described features and functions and interfaces." '157, 15:47-53. The specification also discloses that most of claim 1 was known in the art. It was known (1) for search engines to "use the ranked search results to build one or more search engine result pages," *id.*, 4:8-15; (2) that search engines "typically format[] the search results into concise summaries for each result using a default formatting," *id.*; (3) "to more narrowly tailor search results and . . . employ sophisticated algorithms to rank search results," *id.*; (4) to rank based on "any ranking algorithm known in the art," *id.*, 10:5-6 (emphasis added), 12:7-9 (same); and (5) to identify data objects available over the network that match a keyword "using any conventional search engine technology known in the art[,] such as a bag of words type match," *id.*, 12:3-5, 9:67-10:3 (same). *TLI*, 823 F.3d at 613; *Capital One*, 792 F.3d 1368; *Landmark*, 2015 WL 4388311, at *8 (conducting abstract idea on "a generic computer system" fails to convey eligibility); *First-Class*, 389 F. Supp. 3d at 470-71; *Blackbird*, 2017 WL 2734725, at *5.

The claims also fail to recite an ordered combination of elements that amount to more than the abstract idea. *Semantic*, 425 F. Supp. 3d at 778; *First-Class*, 389 F. Supp. 3d at 470; *see also Hyper Search*, 2018 WL 6617143, at *10 ("Hyper Search does not identify any concrete improvements to specific computer functionality or solutions rooted in problems that only existed on computers."). Conventional search engines receive queries and return results, as recited in claim 1. '157, 4:8-15, 3:46-52; *USC*, 2021 WL 6690275, at *5 (this "is standard web browser

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functionality"). Providing search results based on a perceived intent is also not an unconventional solution, it is the abstract idea itself. *Cisco*, 813 F. App'x at 499; *First-Class*, 389 F. Supp. 3d at 471 ("[P]laintiff can avoid dismissal simply by reciting in the complaint . . . that the inventive concept resides in the abstract idea itself."). And broadly reciting "ranking" or "building a result" in which a "display entry [is] customized to a respective assigned intent," without reciting how, does not provide an inventive concept. *Elec. Power Grp.*, 830 F.3d at 1355.

v.   No Factual Disputes Preclude Resolution

No genuine factual disputes preclude resolution of eligibility now. *E.g., PersonalWeb*, 8 F.4th at 1314; *First-Class*, 389 F. Supp. 3d at 471 (collecting cases); *Semantic*, 425 F. Supp. 3d at 773. Contrary to R2's allegations, the claims do not "improve the speed, efficiency, effectiveness, and functionality of computer systems," or improve "computer functionality." Dkt. 1 ¶ 33. The claims instead use generic computers as tools to carry out an abstract idea. *Elec. Power Grp.*, 830 F.3d at 1355. Determining a user's "intent" and presenting ranked search results does not require a computer. *Id.*; *USC*, 2021 WL 6690275, at *5; *Collarity*, 2015 WL 7597413, at *4-*8; *Semantic*, 425 F. Supp. 3d at 775; *Blackbird*, 2017 WL 2734725, at *4. Moreover, nothing in the claims "reduces the number of queries that must be processed [by a search engine] in order to return relevant results to the user." *See* Dkt. 1 ¶ 33. Nor would this be patentable. *People.ai, Inc. v. SetSail Techs., Inc.*, No. C 20-09148, 2021 WL 5882069, at *7 (N.D. Cal. Dec. 13, 2021) ("eliminating the need to run multiple searches across databases" is abstract). For this proposition, R2 cites a portion of the specification ('157, 12:7-22) that only discloses optionally providing "one or more documents . . . that match[] highly against the 2nd or 3rd most likely intent," which is not claimed. *ChargePoint*, 920 F.3d at 769. Increasing the "probability . . . that a relevant result will be in the final result set presented to the user" (*see* Dkt. 1 ¶ 33) is also not a problem intrinsic to computers; it is something a store clerk or librarian does when asked about a product. *Collarity*,

2015 WL 7597413, at *8 ("[L]ibrarians and other researchers have long known to improve a search query to reflect the user's intended area of interest."); *CyberSource*, 654 F.3d at 1372.

C.   The Claims of the '610 Patent Recite Data Manipulation Using a Known Algorithm

The claims of the '610 patent are directed to manipulating data using a known algorithm. The claims use MapReduce—an admittedly known computing algorithm—on data characterized has having different "schema." Under *Alice* step one, this simply (1) applies an existing algorithm to particular data to generate additional data; and (2) captures a human-practicable activity. Under *Alice* step two, no additional elements transform the claims into patentable subject matter.

i.   Claim 1 Is Representative of the Claims of the '610 Patent

Claim 1—the only claim R2 analyzed in its complaint—is representative. *See* Dkt. 1-5. Claim 1 recites "processing data of a data set over a distributed system, wherein the data set comprises a plurality of data groups." Claim 1 recites (1) "partitioning the data of each . . . data group[] into a plurality of data partitions that each have a plurality of key-value pairs"; (2) "providing each data partition to a selected one of a plurality of mapping functions"; and (3) "reducing [] intermediate data for [] data groups to at least one output data group, including processing the intermediate data for each data group in a manner that is defined to correspond to that data group, so as to result in a merging of the corresponding different intermediate data based on [a] key in common." Each of the mapping functions is "user-configurable to independently output a plurality of lists of values . . . to form corresponding intermediate data for [a] data group and identifiable to that data group." The claim further requires "the data of the first data group [to be] mapped differently than the data of the second data group." The claim then characterizes the data: "the data of a first data group ha[ving] a different schema than the data of a second data group," and "the different schema and corresponding different intermediate data hav[ing] a key in

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common." The claim concludes by invoking token computer implementation: "the mapping and reducing operations are performed by a distributed system."

Claims 2-46 fail to add eligible subject matter. Independent claim 17 adds a "computer system," while independent claims 33 and 40 add a "computer system" with identical "data group" clauses. *TLI*, 823 F.3d at 613. Dependent claims 2 and 18 further define "at least one." *Blackbird*, 2017 WL 2734725, at *4 (this "does not add a meaningful limitation"). Dependent claims 3, 4, 9, 10, 19, 20, 26, 27, 37-39, 45, and 46 introduce "metadata." *Erie*, 850 F.3d at 1329 (use of metadata is not a patent-eligible improvement); *PersonalWeb*, 8 F.4th at 1316 (collecting cases). Dependent claims 5, 11, 12, 21, 22, 28, and 34, and 41 introduce an "iterator" and the "merging" of intermediate data. '610, 1:17-27 (conventional MapReduce's map function "iterate[s]"), 2:49-51 (it also "merged"); *Snowcast Sols. LLC v. Endurance Specialty Hldgs, Ltd.*, No. 15 CV 5305, 2016 WL 1161299, at *4 (N.D. Ill. Mar. 23, 2016) ("'[I]terative' (i.e., repetitive) calculations . . . . merely employ a computer 'for its most basic function.'") (quoting *Bancorp Servs., L.L.C. v. Sun Life Assur. Co. of Canada (U.S.)*, 687 F.3d 1266, 1278 (Fed. Cir. 2012)); *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1351 (Fed. Cir. 2014) ("[A] process of taking two data sets and combining them into a single data set" is abstract). Dependent claims 6-8, 12, 15, 23-25, 35-37, and 42-44 "partition the intermediate data" and provide the partitions to "separate" reducers. *Device Enhancement LLC. v. Amazon.com, Inc.*, 189 F. Supp. 3d 392, 404 (D. Del. 2016) ("[D]ynamically splitting . . . tasks" is abstract). Claims 13-15 and 29-31 mix intermediate data with other data, and data between reducers. *Digitech*, 758 F.3d at 1351 (combining information is abstract). Claims 16 and 32 add "relating the data among . . . data groups" while reducing. *See id.*

ii. Claim 1 Uses a Known Algorithm and Mathematical Principle to Manipulate Data

Claim 1 is directed to the use of a known algorithm in MapReduce. '610, 1:6-15, 2:9-51

(describing the "conventional architecture" of MapReduce), 3:9:12 (same). The patent acknowledges, however, that the data manipulation techniques of MapReduce are a mere "concept," or "programming methodology." *Id.*, 8:47-52, 1:66-2:8, 1:6-15, 1:29-44. The Supreme Court and the Federal Circuit have consistently held that such algorithms and mathematical formulas, without a patentable application, are unpatentable. *Parker v. Flook*, 437 U.S. 584, 595 (1978) ("[C]alculating, using a mathematical formula, even if the solution is for a specific purpose," is abstract) (citation omitted); *Bancorp*, 687 F.3d at 1280 ("[T]he determination of [input] values, and their subsequent manipulation, is a matter of mere mathematical computation."); *Digitech*, 758 F.3d at 1351 ("[A] process that employs mathematical algorithms to manipulate existing information to generate additional information is not patent eligible."); *Mayo Collaborative Servs. v. Prometheus Lab'ys, Inc.*, 566 U.S. 66, 84 (2012) ("[I]mplementing a mathematical principle on a physical machine, namely, a computer, [i]s not a patentable application of that principle."). Claim 1's algorithm merely manipulates data of one particular type into another. *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1327 (Fed. Cir. 2017) ("A process that started with data, added an algorithm, and ended with a new form of data [i]s directed to an abstract idea); *Digitech*, 758 F.3d at 1351 ("[T]aking existing information . . . and organizing this information into a new form" is abstract); *Gottschalk v. Benson*, 409 U.S. 63, 72 (1972) ("[T]he patent. . . in practical effect would be a patent on the algorithm itself.").

Claim 1 is abstract even if it constitutes an "enhancement" to MapReduce. The Federal Circuit reiterated *In re Board of Trustees of Leland Stanford Junior University* that, "[t]he different use of a mathematical calculation, even one that yields different or better results, does not render patent eligible subject matter." 991 F.3d 1245, 1251 (Fed. Cir. 2021). Novelty is not the measure of eligibility. *Id.*, 1252 ("That a specific or different combination of mathematical steps yields

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more accurate haplotype predictions than previously achievable under the prior art is not enough.")
(citing *SAP*, 898 F.3d at 1163 (collecting cases)); *see also Health Discovery Corp. v. Intel Corp.*,
No. 6:20-CV-666, 2021 WL 6116891, at *11 (W.D. Tex. Dec. 27, 2021) (holding that a
"purportedly novel but nevertheless mathematical technique" was directed to "merely produc[ing]
data with improved quality relative to that produced by conventional mathematical methods.").
The specification's description of the purported "enhanced MapReduce" remains a mere
"programming methodology." *Id.*, 1:42-44. Such "abstract intellectual concepts are not patentable
as they are the basic tools of scientific and technological work." *Benson*, 409 U.S. at 67; *see also*
Uniloc USA, Inc. v. Rackspace Hosting, Inc., 18 F. Supp. 3d 831, 838 (E.D. Tex. 2013) ("Claim 1
merely constitutes an [unpatentable] improvement on the known method for processing . . .
numbers."); *Parker*, 437 U.S. at 594-95 ("Respondent's application simply provides a new and
presumably better method for calculating [a] value [that is not patentable].").

     The use of MapReduce on a type of data—so-called data of "different schema"—is nothing
more than the unpatentable characterization of input data. '610, 1:29-33 ("[A]n ***input data set*** . . .
enhances the utility of the MapReduce programming methodology.") (emphasis added) 1:66-2:8,
Abstract; *Digitech*, 758 F.3d at 1350 ("Data in its ethereal, non-physical form is simply
information that does not fall under any of the categories of eligible subject matter under section
101."); *Pers. Beasties Grp. LLC v. Nike, Inc.*, 341 F. Supp. 3d 382, 388 (S.D.N.Y. 2018)
("[L]imiting the information used by a system to a particular type does not make an abstract system
any less abstract.") (citing *Elec. Power Grp.*, 830 F.3d at 1353.), aff'd, 792 F. App'x 949 (Fed.
Cir. 2020)); *RecogniCorp*, 855 F.3d at 1327. The claimed "partitioning" into data groups for
different mapping is also not an eligible improvement to computers because it encompasses basic
computer functionality that, "although computer-centric – would pre-empt substantially all uses of

the underlying ideas at issue." *Device Enhancement*, 189 F. Supp. 3d at 404 ("dynamically splitting" tasks is abstract); *Cyberfone Sys., LLC v. CNN Interactive Grp., Inc.*, 558 F. App'x 988, 992 (Fed. Cir. 2014) ("[U]sing categories to organize, store, and transmit information" is abstract).

Claim 1 also does not recite *how* the data of "different schema" are "mapped differently." It instead broadly recites the result. *Apple*, 842 F.3d at 1241; *Elec. Power Grp.*, 830 F.3d at 1356. The "how" is left as a human input, i.e., "provided by the application developers or users." '610, 6:8-10. *Semantic*, 425 F. Supp. 3d at 775; *Affinity Labs*, 838 F.3d at 1258. A patent on such basic principles forecloses all of its applications. *Flook*, 437 U.S. at 594; *Benson*, 409 U.S. at 72. R2's infringement allegations make this clear by asserting that the mere use of MapReduce software with data of different "schema," regardless of industry or purpose, infringes. Dkt. 1-5, 31-38.

iii.   Claim 1 Recites an Abstract Process Practicable Using Pen and Paper

Claim 1 also encompasses human activity. Figure 5, which corresponds to claim 1 and is described as "an example of the improved MapReduce," '610, 8:14-16, is practicable by a human with a pen and paper. In Figure 5, an "Employee table 302" and "Department table 304" are joined "to generate the Employee and Department table 306." *Id.*, 8:15-24. Each input table is given to a map function in step 504 that produces intermediate data 506. *Id.* The intermediate data is partitioned into records based on the "DeptID." *Id.*, 8:25-33. The intermediate data is provided to the reduce functions 510 to create table 306. *Id.*, 8:34-37.

In this disclosed example, the Employee Table 302 has six records, the department table 304 has four, and the purported "different schema" is a single dissimilar data field (i.e., EmpName vs. DeptName). *Id.*, 3:19-34, Figs. 3, 5. A human could map, partition, and reduce this data without a computer. *Benson*, 409 U.S. at 67 ("The conversion of BCD numerals . . . can be done mentally through use of the foregoing table."); *CyberSource*, 654 F.3d at 1372; *Synopsys*, 839 F.3d at 1149-50; *Bancorp*, 687 F.3d at 1279. Specifically, a human can join the inputs of Figure 3 by mapping

employee "34, Smith" to "34, clerical" in element 502, to yield "34, Smith, Clerical" in element 512. *Stanford*, 991 F.3d at 1251; *Intel*, 2021 WL 6116891, at *11. Claim 1 recites no limitations on the size of the data set to distinguish it from this disclosed example. Nor would the size of the data convey eligibility. *Applied Predictive Techs., Inc. v. Marketdial, Inc.*, No. 2:19-cv-00496, 2020 WL 6940736, at *17 (D. Utah Nov. 25, 2020) ("[T]he scope of the claim language far exceeds only situations involving 'big data.'"). The patent moreover concedes that the map and reduce functions are not generated by computers, but are human inputs. '610, 6:8-10 ("[T]he map and reduce functions can be provided by the ***application developers or users***.") (emphasis added), 1:20-21 (same), 4:38-39 (same). The user-provided maps are even described as an "abstract" formula. *Id.*, 2:24-30 ("***In the abstract***, such a map function is specified as follows: map (in key, in value) → list (out key, intermediate value).") (emphasis added).

iv.   Claim 1 Fails to Recite Significantly More Than the Abstract Idea

The remaining elements fail to transform claim 1 into anything more than an abstract idea. The preamble's "processing data of a data set over a distributed system," and "mapping and reducing operations . . . performed by a distributed system" are functions of "Conventional MapReduce." '610, 1:4-8, 3:9-15. Invocation of generic computers—in this case a "distributed system"—does not confer eligibility. *E.g.*, *Elec. Power Grp.*, 830 F.3d at 1355; *TLI*, 823 F.3d at 613. Combining "Conventional MapReduce" with the basic principle of "partitioning" data also fails—it simply introduces additional abstract concepts. *RecogniCorp*, 855 F.3d at 1327 ("Adding one abstract idea (math) to another abstract idea (encoding and decoding) does not render the claim non-abstract."); *Device Enhancement*, 189 F. Supp. 3d at 404. Nor do the claims represent a patentable ordered combination of elements; as the Patent Office determined, the claimed steps recite nonstatutory data manipulation. Ex. C at 109-22; *RecogniCorp*, 855 F.3d at 1328 ("[Plaintiff] has not alleged a particularized application of [processing] data."). The "distributed

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system" moreover "does exactly what we have warned it may not: tell a user to take an abstract idea and apply it with a computer." *RecogniCorp*, 855 F.3d at 1328.

v.   No Factual Disputes Preclude Resolution

No genuine factual disputes preclude FedEx's requested relief. *PersonalWeb*, 8 F.4th at 1314. Contrary to R2's allegations, the patent does not describe or claim improvements in "the speed, efficiency, effectiveness, and functionality of computer systems." Dkt. 1 ¶ 26. Instead, the parts of the patent R2 cites for this proposition ('610, Abstract, 1:31-33, 1:66-2:2) only vaguely state that the "utility of the MapReduce programming methodology may be enhanced." *Plotkin*, 407 F.3d at 696 ("conclusory allegations" or "unwarranted factual inferences" are not accepted as true). Nor would an enhanced algorithm be eligible. *Stanford*, 991 F.3d at 1251. "[A]pplying a different iterator to intermediate values for each group" (Dkt. 1 ¶ 27) adds yet another abstract concept in iterative computing. *RecogniCorp*, 855 F.3d at 1327. The patent also concedes that "Conventional MapReduce" employs manually-created iterators. '610, 7:24-30; *Snowcast*, 2016 WL 1161299, at *4 (citing *Bancorp*, 687 F.3d at 1278).

The alleged "use of multiple processors to perform processing functions in parallel" (*see* Dkt. 1 ¶ 27), and processing of "large sets of data" (*see id.*) are "Conventional MapReduce" functions. '610, 1:4-8 ("parallel computations over distributed (typically, very large) data sets"). Nor would this be patentable. *SAP*, 898 F.3d at 1170; *Marketdial*, 2020 WL 6940736, at *17. R2 additionally cites to the disclosures of "Conventional MapReduce" for "increase[d] efficiency and reduce[d] processor execution time," and "reduc[ing] network traffic and speed[ing] up the total execution time." Dkt. 1 ¶ 28; *compare* '610, 2:52-53, *with id.*, 1:48-49. Finally, introducing "[c]onfigurable settings" to a conventional process is not patentable. *See* Dkt. 1 ¶ 29.

V.   CONCLUSION

For the foregoing reasons, the Court should grant FedEx's motion to dismiss.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and correct copy of the above and foregoing

document has been served on March 28, 2022, to all counsel of record who are deemed to have

consented to electronic service via the Court's CM/ECF system per Local Rule CV-5(a)(3).

*/s/ Eric H. Findlay*_____
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